(12) UK Patent Application (19) GB (11) 2 141 077 A

(43) Application published 12 Dec 1984

(21) Application No 8313871

(22) Date of filing 19 May 1983

(51) INT CL³
B62D 25/20

(52) Domestic classification
B7B 254 270 33Y CM

(56) Documents cited
GB 0799535 GB 0566199 GB 0387988
GB 0736757

(58) Field of search
B7B

(71) Applicant
Craven Tasker (Woodville) Ltd (United Kingdom),
Sun Street, Woodville, Burton-on-Trent DE11 7DR

(72) Inventor
John Lawson

(74) Agent and/or Address for Service
Kilburn & Strode,
30 John Street, London WC1N 2DD

(54) Tipper body

(57) A floor for a tipper body for a lorry or truck comprises two floor sections (23) extending longitudinally on either side of a support spine (21) the support spine being in the form of a single folded sheet defining a central portion (33) and a pair of longitudinal supports having vertical side walls (34). The tipper also includes a pair of top rails (18), a pair of bottom rails (31) and two pillars front and rear.

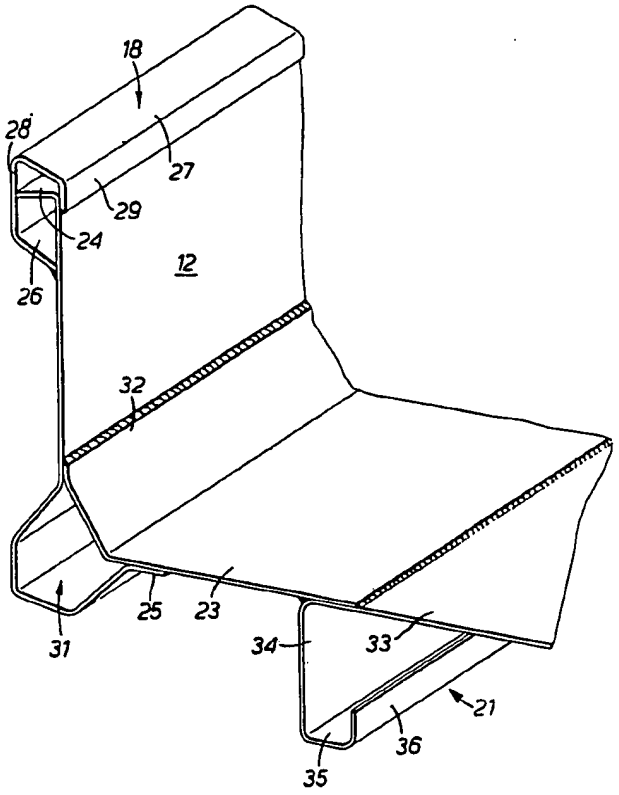

Fig.6.

GB 2 141 077 A

2141077

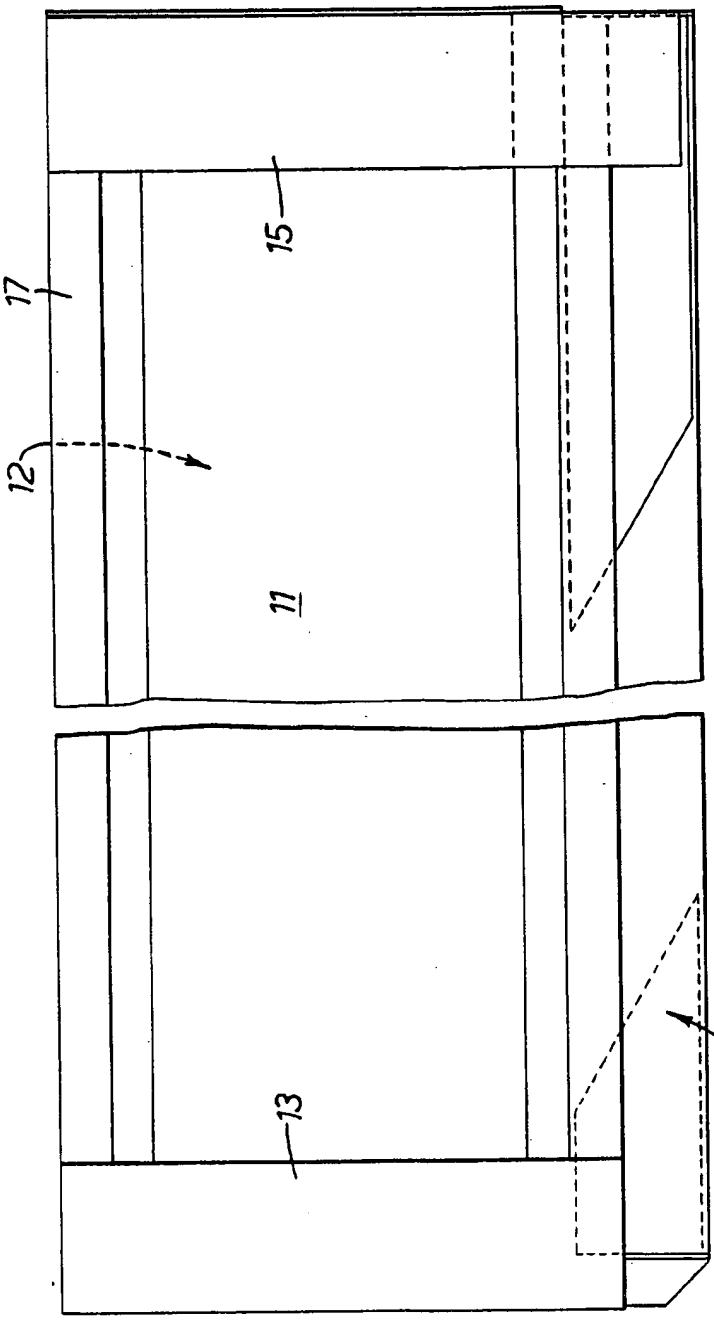

FIG. 1.

2141077

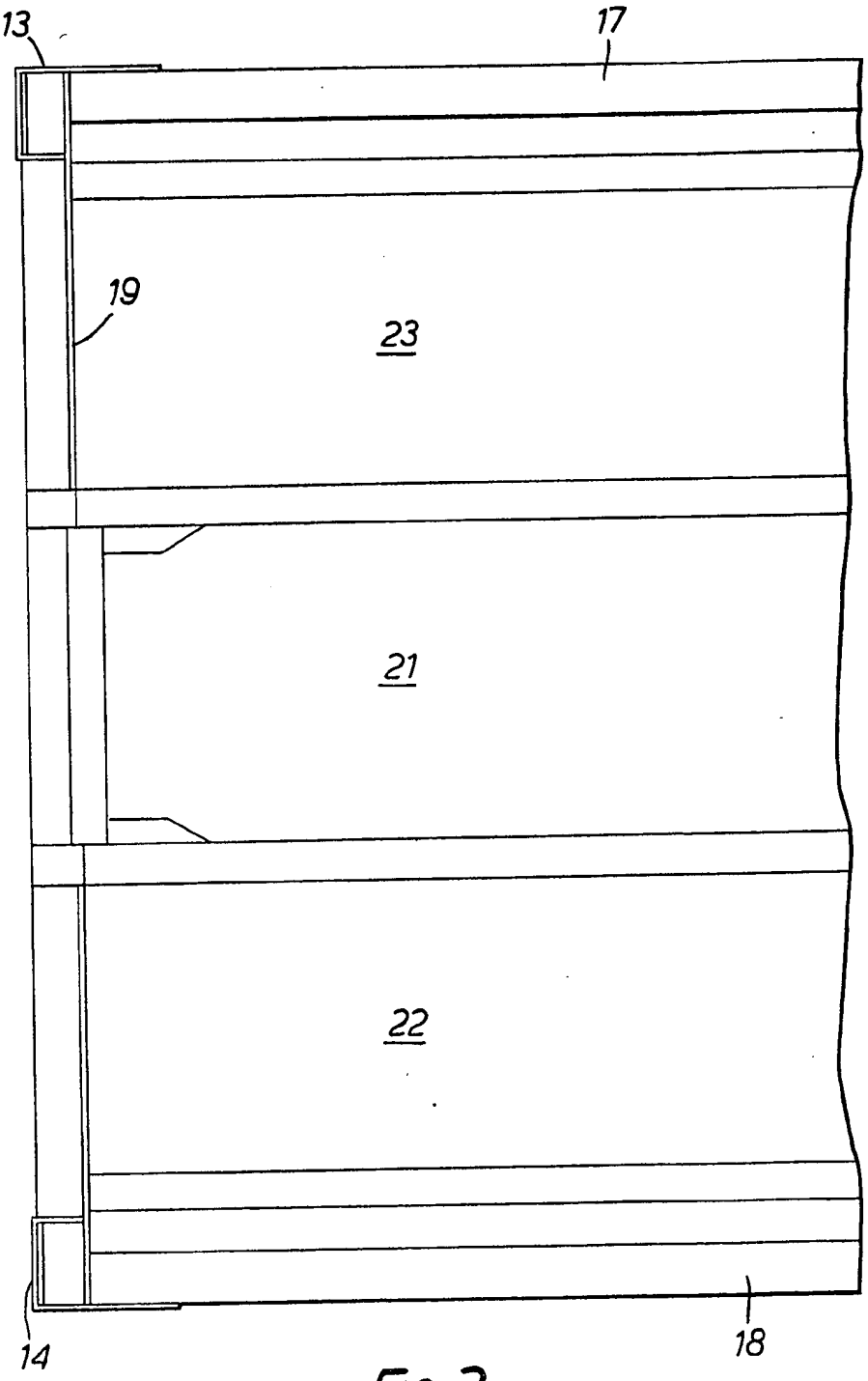

FIG. 2.

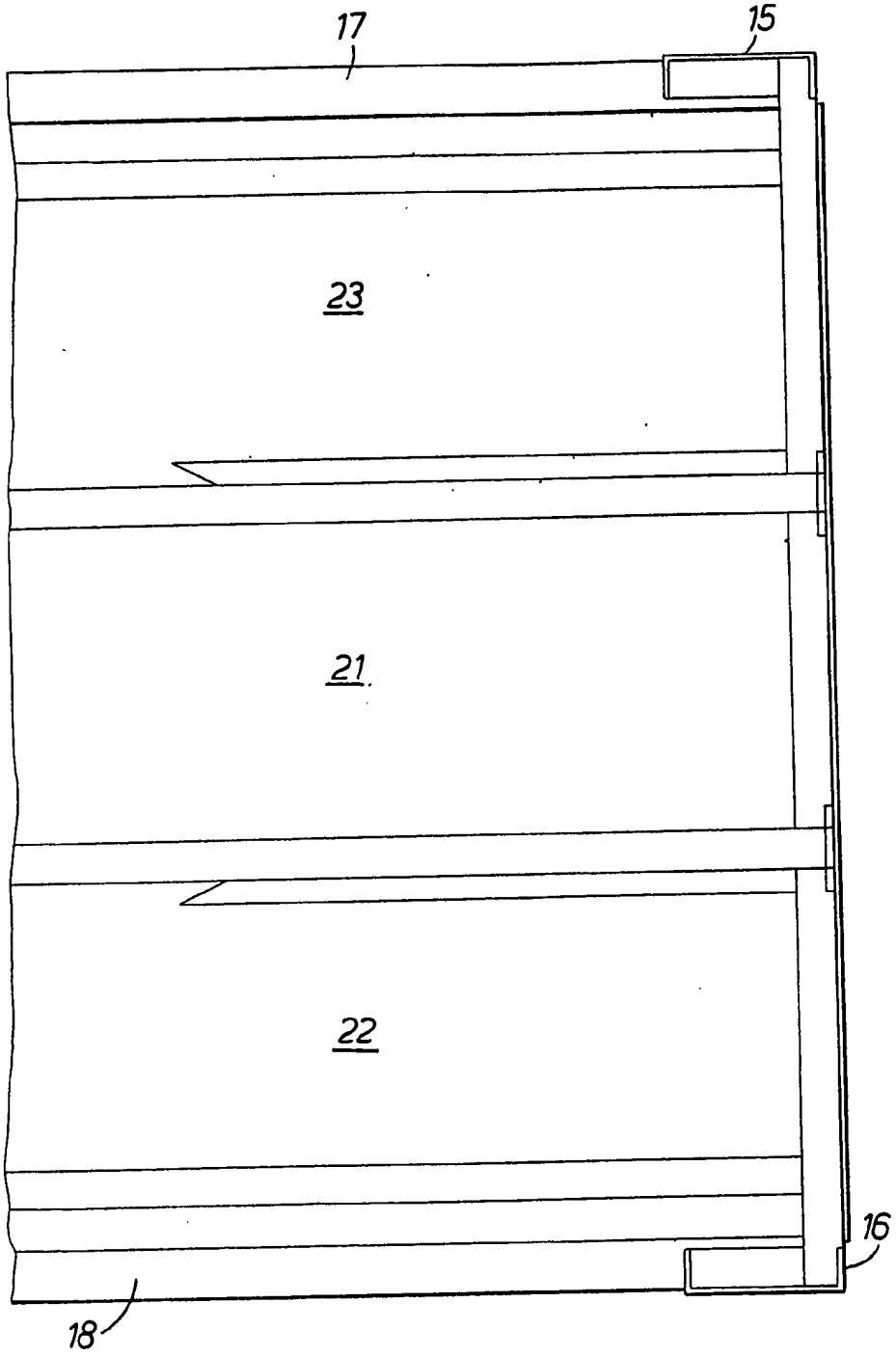

FIG. 3.

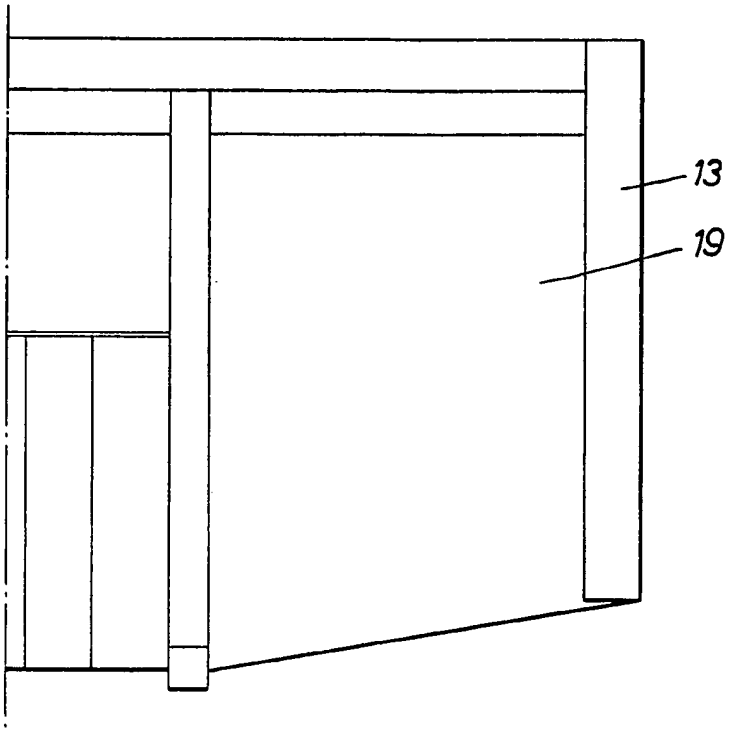

FIG. 4.

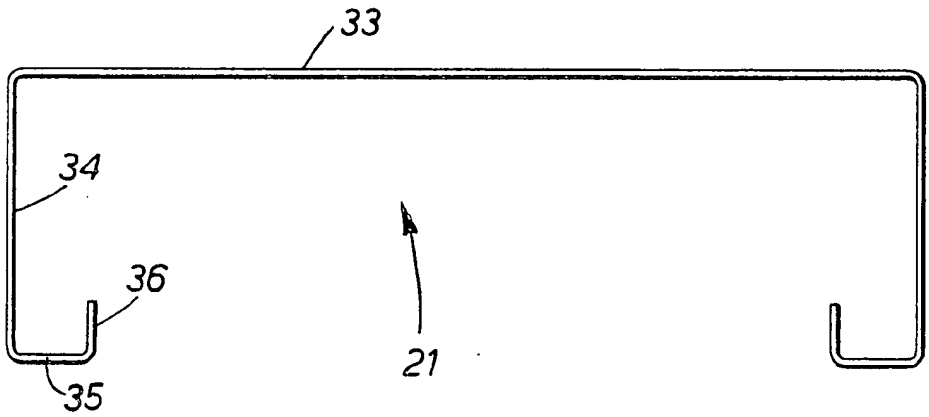

FIG. 5.

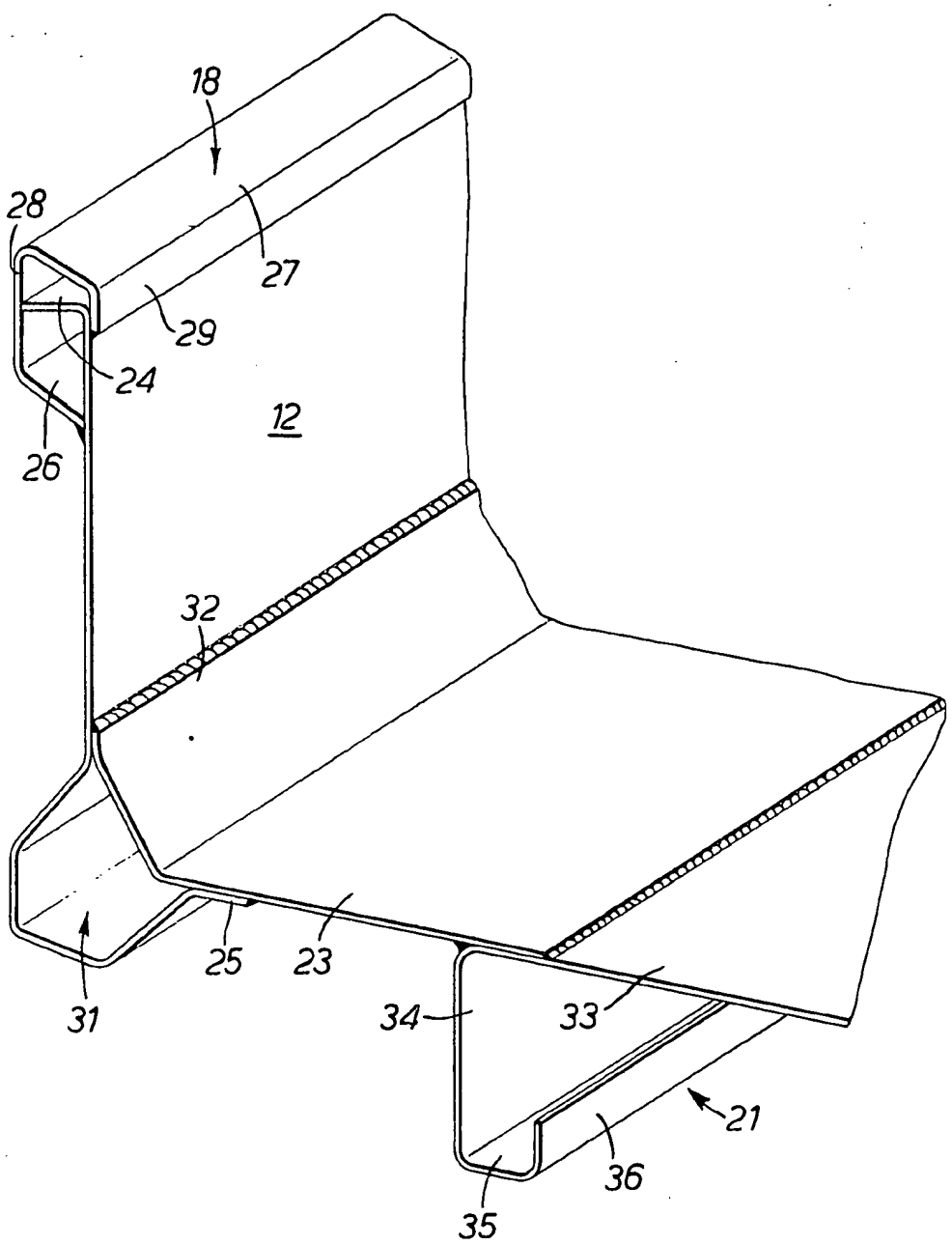

FIG. 6.

SPECIFICATION

Tipper body

The present invention relates to a tipper body for lorries, trucks and the like, for example for transporting aggregates, particularly by road.

A common known construction of tipper body comprises a floor, two vertical front posts, two vertical rear posts, a fixed front panel and two fixed side panels all welded together to form a rigid construction. A rear panel is hingedly connected between the rear posts. Longitudinal rigidity is given by a top rail along the top of each side of the body and to a lesser extent by two bottom rails constituted by a downward and outward extension of each side wall to form overhanging lips. The floor is welded to a pair of longitudinal frame members which run the length of the body beneath the floor and which are trapezium-shaped in cross-section, with the walls diverging upwardly. These two frame members are hinged to the truck chassis at the rear and effectively rest on the chassis along their lengths. In order to tip the body, hydraulic rams lift the front ends of the frame members which then pivot about the rear hinges. These frame members provide the prime longitudinal support for the body as a whole.

One of the disadvantages of this construction is that special hinge mountings are required for the tipping hinges.

It is an object of the present invention to provide a tipper body construction which can accept standard hinge equipment currently associated with standard hydraulic tipping gears.

It is a further object to provide a construction in which the side panels are stiffened more effectively and in which the longitudinal rigidity and strength is taken up more equally between the top and bottom rails.

According to the invention, a tipper body construction comprises a floor, a fixed front wall, two fixed side walls, and a pair of longitudinal supports fixed beneath the floor, the pair of supports comprising a single folded sheet having parallel vertical sides.

This construction may enable standard hinge mountings to be used for the tipper body.

Preferably, the construction further comprises a pair of rear corner pillars, and a pair of front corner pillars, the front wall being fixed between the front pillars and the two side walls being fixed between corresponding front and rear pillars. The construction also preferably includes a top rail fixed along the top of each side wall and a bottom rail extending along the bottom of each side wall, the bottom rails preferably being fixed to the floor. Thus, this may offer increased rigidity to the floor in the longitudinal direction.

Preferably, the single folded sheet constituting the pair of supports is in the form of a spine, The spine having a horizontal central portion and a pair of depending support sections with parallel vertical side walls, on each side of the central portion. Preferably, the central portion constitutes a part of the floor of the tipper body.

Preferably, the top of each side wall is folded outwards to define a flange, and each corresponding top rail is a folded sheet which is fixed to the outside of the side wall beneath the flange and to the inside of the side wall at a higher level. The top surface of the top rail may be angled downwards and inwards.

The "fixing" referred to above is preferably welding and the material from which the components are made is preferably (welding and the material from which the components are made is preferably) an aluminium alloy e.g. NS8 alloy.

The invention may be carried into practice in various ways and one embodiment will now be described by way of example with reference to the accompanying drawings in which:

Figure 1 is a side elevation of a tipper body in accordance with the invention, with the horizontal dimension reduced;

Figure 2 is a plan view of the front end of the tipper body;

Figure 3 is a plan view of the rear end of the tipper body;

Figure 4 is a front elevation of the right hand half of the tipper body;

Figure 5 is a section to an enlarged scale of the central support spine; and

Figure 6 is an isometric vertical section through the tipper body.

Referring to Figures 1, 2, 3 and 4 of the drawings, the tipper body has two side walls 11, 12, two front pillars 13, 14, two rear pillars 15, 16, a pair of top rails 17, 18 running along the top of each of the side walls 11, 12 respectively, a front wall 19, a central support spine 21, and a pair of floor sections 22, 23 extending longitudinally on either side of the support spine 21. The front pillars 13, 14 are welded to the front wall 19, to the top rails 17, 18 and to the side walls near their bottom edge. The bottom part of the side walls 11, 12 extend outwards in each case as shown more clearly in Figure 6.

The rear pillars 15, 16 are similarly welded to the top rails 17, 18 and the side walls 11, 12. A rear flap (not shown) may be hingedly connected between the rear pillars 15, 16.

The shape and interconnection of the side walls 11, 12, the top rails 17, 18, the support spine 21, and the floor sections 22, 23 will now be described in more detail with reference to Figures 5 and 6. Like the pillars 13, 14, 15 and 16, these components are all folded aluminium sheets. Figure 6 shows one half of the tipper body in section, and it is to be understood that the other half is a mirror image.

The top of the side wall 12 is folded outwards to define a longitudinal flange 24. At the bottom, the wall 12 is folded first outwardly downwards at an angle then vertically downwards before extending back beneath itself horizontally then upwards at an angle and finally horizontally to define a longitudinally extending bottom flange 25. The shape so formed effectively defines a bottom rail 31 extending along the length of the body.

The top rail 18 has an incomplete box section as shown in Figure 6, with three longitudinal fold lines defining two parallel inclined faces 26, 27 and two vertical faces 28, 29. The vertical face 29 is shorter than the vertical face 28 and is welded to the side wall 12 just below the flange 24. The edge of the lower inclined face 26 is welded to the outside of the side wall 12 at a distance below the flange 24. It will be appreciated that this construction gives the structure as a whole a significant longitudinal stiffness. The inclination of the inclined face 27 is downwards and inwards in order to deflect stones etc. into the interior of the tipper body.

The vertical face 28 of the top rail 18 and the vertical face of the bottom rail 31 provide locations at which the pillars 13, 14, 15 and 16 can be welded.

The floor section 23 is generally flat but is folded through 45° upwards towards the side wall 12 and is provided with a small vertically extending longitudinal flange 32 which meets the side wall 12 and is welded to it just above the bottom rail 31. The bottom flange 25 of the bottom rail 31 is welded beneath the floor section 23 at a position which is inwards of the inclined portion of the floor section 23. This therefore means that the bottom rail 31 is closed to the outside giving considerable longitudinal strength to the structure as a whole. Furthermore, the angled portion of the floor section 23 adds stiffness to the outer part of the floor section 23.

The central spine 21 is shown in section in Figure 5 and comprises a flat central portion 33 and on each side a vertical web 34, a horizontal lip 35 folded back beneath the central portion 33 and an up-turned edge 36. The support spine 21 extends longitudinally along the tipper body between the floor sections 23, 24 so that the flat central portion 33 defines the central part of the floor of the tipper body.

The inner edges of the floor sections 23, 24 overlap the outer edges of the central portion 33 and are welded in position. This constructions provides the prime longitudinal support for the tipper body and obviates the need to have two separate longitudinal support members.

Furthermore, the vertical web 34 will accept standard hinge equipment associated with standard hydraulic tipping gears, thus obviating the need for a special hinge.

It will be appreciated that the tipper body described will also incorporate various other standard constructional features such as a headboard rail, various flitch plates, sills, hydraulic ram fittings, mudguards, etc., but these have not been described in detail since they will be know to those skilled in the art.

CLAIMS

1. A tipper body construction comprising a floor, a fixed front wall, two fixed side walls, and a pair of longitudinal supports at the underside of the body, the pair of supports comprising a folded sheet in the form of a spine having a central horizontal portion and a pair of depending support sections with parallel vertical side walls, one support section being on each side of the central portion.

2. A tipper body as claimed in claim 1 further comprising a pair of rear corner pillars, and a pair of front corner pillars, the front wall being fixed between the front pillars and the two side walls being fixed between corresponding front and rear pillars.

3. A tipper body as claimed in Claim 1 or Claim 2 further including a top rail fixed along the top of each side wall and a bottom rail extending along the bottom of each side wall.

4. A tipper body as claimed in Claim 3 in which each bottom rail is an integral folded portion of the corresponding side wall.

5. A tipper body as claimed in Claim 4 in which the bottom rails are fixed to the floor.

6. A tipper body as claimed in any preceding claim in which the central portion of the spine constitutes a part of the floor of the tipper body.

7. A tipper body as claimed in any of Claims 3 to 6 in which the top of each side wall is folded outwards to define a flange and each corresponding top rail is a folded sheet which is fixed to the outside of the side wall beneath the flange and the inside of the side wall at a higher level.

8. A tipper body as claimed in any of Claims 3 to 7 in which the top surface of each top rail is angled downwards and inwards.

9. A tipper body as claimed in any preceding claim further including a rear tailgate which opens at the bottom rearwards from top mounted hinges.

10. A tipper body constructed and arranged substantially as herein specifically described with reference to and as shown in the accompanying drawings.

Printed in the United Kingdom for
Her Majesty's Stationery Office, Dd 8818935, 1984, 4235.
Published at The Patent Office, 25 Southampton Buildings,
London, WC2A 1AY, from which copies may be obtained.